REMARKS

This application has been carefully reviewed in light of the final Office Action dated June 7, 2006. Claims 2, 5-7, 9, 12, 15, 18, and 19 have been cancelled, without prejudice or disclaimer of the subject matter; and claims 21 and 22 have been newly added herein. Claims 1, 3, 4, 8, 10, 11, 13, 14, 16, 17, and 20-22 remain in the application, of which claims 1, 11 and 17 are the independent claims. Claims 1, 3, 4, 8, 10, 11, 13, 14, 16, 17, and 20 have been amended. Reconsideration and further examination are respectfully requested.

Initially, it is noted that support for the substance of the amendments and the new claims is found throughout the disclosure, including at least page 6, line 24 to page 7, line 21 and page 11, line 28 to page 12, line 17 of the specification; and Figures 3-4. Accordingly, the Applicants respectfully assert that no new matter has been introduced.

In the Office Action, claims 1-3, 5-7, 9-13, 15, and 17-20 were rejected under 35 U.S.C. § 102(b) over U.S. Patent No. 5,454,102 ("Tang"); claims 4 and 14 were rejected under 35 U.S.C. § 103(a) over Tang in view of U.S. Patent No. 6,006,233 ("Schultz"); and claims 8 and 16 were rejected under 35 U.S.C. § 103(a) over Tang in view of U.S. Patent No. 6,801,905 ("Andrei"). As indicated above, claims 2, 5-7, 9, 12, 15, 18, and 19 have been cancelled, without prejudice or disclaimer of the subject matter, and without conceding to the corrections of the rejections. Furthermore, independent claims 1, 11, and 17 have been amended to obviate this rejection. Withdrawal of the rejections and further examination are therefore respectfully requested.

As embodied in the independent claims 1, 11, and 17, the present disclosure generally describes that data objects are stored as nodes in a hierarchically-structured, multi-dimensional directed graph, the directed graph including a predecessor node, a first and a second intermediary nodes, and a successor node, the successor node connected to the predecessor node via a first sequence of nodes including the successor node, the first intermediary node, and the predecessor node and a second sequence of nodes including the successor node, the second intermediary node, and the predecessor node. The first and the second sequences of nodes are stored for the successor node, and a query is received involving the successor node. The query is compared to the first or the second sequence of nodes, and is resolved based upon the comparison.

Referring to specific claim language, independent claim 1 recites a method including storing data objects as nodes in a hierarchically-structured, multi-dimensional directed graph, the directed graph including a predecessor node, a first and a second intermediary nodes, and a successor node, the successor node connected to the predecessor node via a first sequence of nodes including the successor node, the first intermediary node, and the predecessor node and a second sequence of nodes including the successor node, the second intermediary node, and the predecessor node. The method also includes storing, for the successor node, the first and the second sequences of nodes, and receiving a query involving the successor node. Furthermore, the method includes comparing the query to the first or the second sequence of nodes, and resolving the query based upon comparing the query to the first or the second sequence of nodes.

Independent claim 11 recites an apparatus comprising a storage medium having instructions stored thereon, the instructions including a first code segment for storing data objects as nodes in a hierarchically-structured, multi-dimensional directed graph, the directed graph including a predecessor node, a first and a second intermediary nodes, and a successor node, the successor node connected to the predecessor node via a first sequence of nodes including the successor node, the first intermediary node, and the predecessor node and a second sequence of nodes including the successor node, the second intermediary node, and the predecessor node. The apparatus also includes a second code segment for storing, for the successor node, the first and the second sequences of nodes, and a third code segment for receiving a query involving the successor node. Furthermore, the apparatus includes a fourth code segment for comparing the query to the first or the second sequence of nodes, and a fifth code segment for resolving the query based upon comparing the query to the first or the second sequence of nodes.

Independent claim 17 recites a system including means for storing data objects as nodes in a hierarchically-structured, multi-dimensional directed graph, the directed graph including a predecessor node, a first and a second intermediary nodes, and a successor node, the successor node connected to the predecessor node via a first sequence of nodes including the successor node, the first intermediary node, and the predecessor node and a second sequence of nodes including the successor node, the second intermediary node, and the predecessor node. The system also includes means for storing, for the successor node, the first and the second sequences of nodes, and means for receiving a query involving the successor node. Furthermore, the

system also includes means for comparing the query to the first or the second sequence of nodes, and means for resolving the query based upon comparing the query to the first or the second sequence of nodes.

The applied art is not seen to disclose, teach, or suggest the features of independent claims 1, 11, and 17. In particular, the applied art is not seen as disclosing at least the features of *i)* storing data objects as nodes in a hierarchically-structured, multi-dimensional directed graph, the directed graph including a predecessor node, a first and a second intermediary nodes, and a successor node, the successor node connected to the predecessor node via a first sequence of nodes including the successor node, the first intermediary node, and the predecessor node and a second sequence of nodes including the successor node, the second intermediary node, and the predecessor node, *ii)* storing, for the successor node, the first and the second sequences of nodes, *iii)* receiving a query involving the successor node, *iv)* comparing the query to the first or the second sequence of nodes, and *v)* resolving the query based upon comparing the query to the first or the second sequence of nodes.

Tang is seen to describe a self-generating, uni-dimensional directed graph, which represents the structure and contents of structured data. *See* Tang, col. 3, ll. 45 to 50; Fig. 4; and Abstract. As shown in Figure 4 of Tang, in the uni-dimensional directed graph every node is understood to be connected to every non-adjacent node via only one other node. For example, as shown in Figure 4 of Tang, the data node (45) is seen to be connected to root node (42) via only list node (44). Similarly, data node (46) is seen to be connected to root node (42) via only list node (44). In Figure 1, root node 1 includes a list 11 of nodes contained in the root, as well as a data note building process. *See* Tang, col. 3, ll. 50 to 55. List node 20 is seen to contain a list 21 of the nodes contained in the list node, as well as process steps 22 for building additional list nodes, process steps 24 for building additional data nodes, and process steps 25 for querying structured data. *See* Tang, col. 4, ll. 4 to 10.

Accordingly, Tang is not seen to describe, nor does the Office Action even assert that Tang describes, at least the features of *i)* storing data objects as nodes in a hierarchically-structured, multi-dimensional directed graph, the directed graph including a predecessor node, a first and a second intermediary nodes, and a successor node, the successor node connected to the predecessor node via a first sequence of nodes including the successor node, the first

intermediary node, and the predecessor node and a second sequence of nodes including the successor node, the second intermediary node, and the predecessor node, *ii)* storing, for the successor node, the first and the second sequences of nodes, *iii)* receiving a query involving the successor node, *iv)* comparing the query to the first or the second sequence of nodes, and *v)* resolving the query based upon comparing the query to the first or the second sequence of nodes.

Based on the foregoing amendments and remarks, the applied reference is not seen to anticipate independent claims 1, 11, and 17, which are thus believed to be allowable. The other rejected claims in the application are each dependent from independent claims 1, 11, and 17 and are believed to be allowable over the applied references for at least the same reasons. Because each dependent claim is deemed to define additional aspects of the invention, however, individual consideration of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, the entire application is believed to be in condition for allowance and such action is respectfully requested at the Examiner's earliest convenience.

No fees are believed due at this time. Please apply any charges or credits to Deposit Account 06-1050.

Respectfully submitted,

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